

# G. J. MULTI GASES PVT. LTD.

Regd. Office & Factory : Plot No. N-64, Addl. Ambarnath M.I.D.C., Anand Nagar, Jambivali Village, Ambarnath (E) - 421 506.

Tel. : (0251) 262-0177 / 1783 / 0212 / 0232 • Fax : (0251) 2621785 • EMail : gjmultigases@yahoo.co.in

CIN : U 23 200 MH 2006 PTC 161577

Date : / /

## MATERIAL SAFETY DATA SHEET

### SECTION 1. PRODUCT IDENTIFICATION

**PRODUCT NAME** : AMMONIA **CHEMICAL NAME** : Ammonia  
**COMMON NAMES/SYNONYMS** : Ammonia Anhydrous; Anhydrous Ammonia

### SECTION 2. COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENT	% VOLUME	PEL-OSHA1	TLV-ACGIH2	LD50 or LCSO Route/Species
Ammonia FORMULA: NH3 CAS: 7664-41-7 RTECS #: 800875000	100.0	50 ppm TWA	25 ppm TWA 35 ppm STEL	LC50 2000 ppm/4H

### SECTION 3. HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

irritating or corrosive to exposed tissues. Inhalation of vapors may result in pulmonary edema and chemical pneumonitis. Slightly flammable.

#### ROUTE OF ENTRY :

Skin Contact : Yes  
Skin Absorption : No  
Eye Contact : Yes  
Inhalation : Yes  
Ingestion : No

#### HEALTH EFFECTS :

Exposure Limits : Yes  
Irritant : Yes  
Sensitization : No  
Teratogen : No  
Reproductive Hazard : No  
Mutagen : Yes

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## SYNERGISTIC EFFECTS :

None Reported

Carcinogenicity : - NTP: No IARC: No OSHA: No

## EYE EFFECTS :

Mild concentrations of product will cause conjunctivitis. Contact with higher concentrations of product will cause swelling of the eyes and lesions with a possible loss of vision.

## SKIN EFFECTS :

Mild concentrations of product will cause dermatitis or conjunctivitis. Contact with higher concentrations of product will cause caustic-like dermal burns and inflammation. Toxic level exposure may cause skin lesions resulting in early necrosis and scarring.

## INGESTION EFFECTS :

Since product is a gas at room temperature, ingestion is unlikely.

## INHALATION EFFECTS:

Corrosive and irritating to the upper respiratory system and all mucous type tissue. Depending on the concentration inhaled, it may cause burning sensations, coughing, wheezing, shortness of breath, headache, nausea, with eventual collapse. Inhalation of excessive amounts affects the upper airway (larynx and bronchi) by causing caustic-like burning resulting in edema and chemical pneumonitis. If it enters the deep lung, pulmonary edema will result.

Pulmonary edema and chemical Pneumonitis are potentially fatal conditions.

## SECTION 4. FIRST AID MEASURES

### EYES :

Flush contaminated eye(s) with copious quantities of water. Part eyelids to assure complete flushing. Continue for a minimum of 15 minutes. PERSONS WITH POTENTIAL EXPOSURE TO AMMONIA SHOULD NOT WEAR CONTACT LENSES.

### SKIN :

Remove contaminated clothing as rapidly as possible. Flush affected area with copious quantities of water. In cases of frostbite or cryogenic "burns" flush area with lukewarm water. Do NOT USE HOT WATER. A physician should see the patient promptly if the cryogenic "burn" has resulted in blistering of the dermal surface or deep tissue freezing.

### INGESTION :

Not specified. Seek immediate medical attention.

### INHALATION :

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS. Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area, given mouth-to-mouth resuscitation and supplemental oxygen. Keep victim warm and quiet. Assure that mucus or vomited material does not obstruct the airway by positional drainage.

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## SECTION 5. FIRE FIGHTING MEASURES

Conditions of Flammability : Nonflammable  
Flash point : None  
Method : Not Applicable  
Auto ignition :  
Temperature : 1274°F (690°C)  
LEL(%) : 16 UEL(%) : 25  
Hazardous combustion products: None  
Sensitivity to mechanical shock : None  
Sensitivity to static discharge : None

### FIRE AND EXPLOSION HAZARDS :

The minimum ignition energy for ammonia is very high. It is approximately 500 times greater than the energy required for igniting hydrocarbons and 1000 to 10,000 times greater than that required for hydrogen.

### EXTINGUISHING MEDIA :

Water fog. Use media suitable for surrounding fire.

### FIRE FIGHTING INSTRUCTIONS :

If possible, stop the flow of gas. Since ammonia is soluble in water, it is the best extinguishing media not only in extinguishing the fire, but also absorbing the escaped ammonia gas. Use water spray to cool surrounding containers.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with inert gas prior to attempting repairs. If leak is in container or container valve, contact the appropriate emergency telephone number listed in Section 1 or call your closest BOC location.

## SECTION 7. HANDLING AND STORAGE

### Electrical Classification :

Class 1, Group D.

Earth-ground and bond all lines and equipment associated with the ammonia system. Electrical equipment should be non-sparking or explosion proof.

Gaseous or liquid anhydrous ammonia corrodes certain metals at ambient temperatures. The presence of oxygen enhances the corrosion of ordinary or semi-alloy steels. The addition of water inhibits this enhancement. Keep anhydrous ammonia systems scrupulously dry. Use only in well-ventilated areas. Valve protection caps must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure regulator when connecting cylinder to lower pressure (<500 psig) piping or systems. Do not heat cylinder by any

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means to increase the discharge rate of product from the cylinder. Use a check valve to trap in the discharge line to prevent hazardous back flow into the cylinder.

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 125°F (52°C).

Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in-first out" inventory system to prevent full cylinders from being stored for excessive periods of time.

## SECTION 8. EXPOSURE CONTROLS, PERSONAL PROTECTION

INGREDIENT	% VOLUME	PEL-OSHA1	TLV-ACGIH2	LD50 or LC50 Route/Species
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1 As stated in 29 CFR 1 910, Subpart Z (revised July 1, 1993)

2 As stated in the ACGIH 1994-95 Threshold Limit values for chemical Substances and Physical Agents.

### ENGINEERING CONTROLS :

Use local exhaust ventilation to reduce concentrations to within current exposure limits. A laboratory type hood is suitable for handling small or limited quantities.

### EYE/FACE PROTECTION :

Gas tight chemical goggles or full-face piece respirator.

### SKIN PROTECTION :

Protective gloves made of any suitable material.

### RESPIRATORY PROTECTION :

Level C respiratory protection with full face piece or self-contained breathing apparatus should be available for emergency use. Air purifying respirators must be equipped with suitable cartridges. Do not exceed maximum use concentrations. Do not use air purifying respirators in an oxygen deficient immediately dangerous to life and health (IDLH) atmosphere. Consult manufacturer's instructions before use.

### OTHER/GENERAL PROTECTION :

Safety shoes, safety shower, eyewash "fountain".

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES PARAMETER VALUE UNITS

PARAMETER	VALUE	UNITS
Physical state (gas, liquid, solid)	: Gas	
Vapor pressure at 70°F	: g4	psia
Vapor density at 60°F (Air = 1)	: 0.62	
Evaporation point	: Not Available	
Boiling point	: -28	°F
	: -33.3	°C
Freezing point	: 107.9	°F
	: -77.7	°C
pH	: Not Available	
Specific gravity	: Not Available	
Oil/water partition coefficient	: Not Available	
Solubility (H2O)	: Very soluble	
Odor threshold	: Not Available	
Odor and appearance	: A colorless gas with a pungent odor.	

## SECTION 10. STABILITY AND REACTIVITY

**STABILITY** : Unstable

**CONDITIONS TO AVOTD (STABILITY)** : None

### INCOMPATIBLE MATERIALS :

Reacts vigorously with fluorine, chlorine, HCl, HBr, nitrosyl chloride, chromyl chloride, nitrogen dioxide, trioxxygen difluoride, and nitrogen trichloride.

PRODUCT NAME: AMMONIA

### HAZARDOUS DECOMPOSITION PRODUCTS :

Hydrogen at very high temperatures: 1544°F (840°C).

### CONDITIONS TO AVOTD POLYMERIZATION :

None

### HAZARDOUS POLYMERIZATION :

Will not occur.

## SECTION 11. TOXICOLOGICAL INFORMATION

### MUTAGENIC :

Genetic mutations observed in bacterial and mammalian test systems.

### OTHER :

Toxic effects to the respiratory system, senses, liver, kidneys and bladder observed in mammalian species from prolonged inhalation exposures at above 100 ppm.